Robotics

IRB 6640/ IRB 6640ID
Industrial Robot

Main Applications
Material handling
Machine tending
Spot welding

IRB 6640 – a strong robot for various applications
The IRB 6640 comes in different arm lengths and matching handling capacities. It is based on proven components from earlier generations, which ensures easy maintenance and exchangeability as well as high up time.

Upper arm extenders and different wrist modules allow customization to each process. As the robot can bend fully backwards, the working range is greatly extended and the robot fits well into dense production lines. Typical application areas are material handling, machine tending and spot welding.

The robot is also available with different options for different working environments, such as Foundry Plus 2, Foundry Prime 2 and Clean Room.

IRB 6640ID, Internal Dressing, has its process cables routed inside the upper arm. The cables follow every motion of the robot arm instead of coming into swing in irregular patterns.

Higher payload
The maximum payload is 235 kg, which makes the robot suitable for many heavy material handling applications. The robot also follows the tradition of having outstanding inertia capabilities, which makes it possible to handle not only heavy but also wide parts. Collision resistance is also a great feature ABB robots are well known for.

For the IRB 6640ID, the payload is 200 kg, which meets the requirements from the heaviest spot welding applications.

Easy maintenance
Simplified fork lift pockets and more space in the robot foot give easy maintenance.

Increased path performance
IRB 6640 runs the second generation of TrueMove™ and QuickMove™. This gives the robot more accurate motions, which, in the end, means less time for programming as well as a better process result. This software also supervises internal robot loads, which means reduced risk of overload and longer robot lifetime.

Passive Safety Features
Passive Safety Features include load identification, movable mechanical stops, EPS (Electronic Positions Switches) and a stiff steel structure.

IRB 6640ID – Internal dressing in the upper arm
This version has the process cabling for spot welding routed inside the upper arm. This gives a controlled motion with different benefits, such as predictable dress pack lifetime, longer dress pack lifetime and less spare part cost; a more compact robot when dressed and also a reliable simulation of dress pack motion.

Focusing on high production capacity, compact design, simple service and low maintenance cost, IRB 6640 is the perfect robot for various applications!

IRB 6640/ IRB 6640ID

Specification

Robot versions IRB	Reach	Handling capacity	Center of gravity	Wrist torque
6640-180	2.55 m	180 kg	300 mm	961 Nm
6640-235	2.55 m	235 kg	300 mm	1324 Nm
6640-205	2.75 m	205 kg	300 mm	1264 Nm
6640-185	2.8 m	185 kg	300 mm	1206 Nm
6640-130	3.2 m	130 kg	300 mm	1037 Nm
6640ID-200	2.55 m	200 kg	300 mm	1262 Nm
6640ID-170	2.75 m	170 kg	300 mm	1190 Nm

Extra loads can be mounted on all variants.

50 kg on upper arm (except ID) and 250 kg on frame of axis 1.

Number of axes:	6
Protection	Complete robot IP 67
Mounting:	Floor mounted

IRC5 Controller variants: Single cabinet, Dual cabinet

Performance

Positions repeatability	0.07 mm
Path repeatability	0.7 mm

Axis movements	Working range 6640	Working range 6640ID	Axis max speed 6640
Axis 1 Rotation	+170° to - 170°	+170° to - 170°	100 - 110°/s
Axis 2 Arm	+85° to - 65°	+85° to - 65°	90°/s
Axis 3 Arm	+70° to - 180°	+70° to - 180°	90°/s
Axis 4 Wrist	+300° to - 300°	+300° to - 300° *	170 - 190°/s
Axis 5 Bend	+120° to - 120°	+100° to - 100°	120 - 140°/s
Axis 6 Turn	+360° to - 360°	+300° to - 300°	190 - 235°/s

* For IRB 6640ID axis 4 and 6 together max +300° to -300°

A supervision function prevents overheating in applications with intensive and frequent movements.

Electrical Connections

Supply voltage	200-600 V,50/60 Hz
Power consumption	ISO-Cube 2.7kW

Physical

Dimensions robot base	1107 x 720 mm
Weight	1310 - 1405 kg

Environment

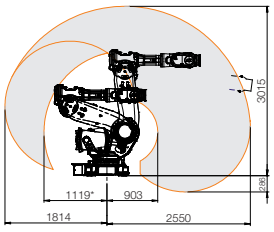
Ambient temperature for mechanical unit	
During operation	+ 5° C (41°F) -+50°C (122°F) *
During transportation and storage for short periods (max 24h)	- 25° C (13°F) -+55°C (131°F) up to +70° C (158°F)
Relative humidity	Max 95 %
Noise level	Max 71 dB (A)
Safety	Double circuits with supervision, emergency stops and safety functions, 3-position enable device
Emission	EMC/EMI-shielded
Options	Foundry Plus 2 Foundry Prime 2 Clean Room, class 5 - IRB 6640-180 (certified By IPA)

* In a high-speed press tending application, max ambient temperature is 40 °C.

Data and dimensions may be changed without notice

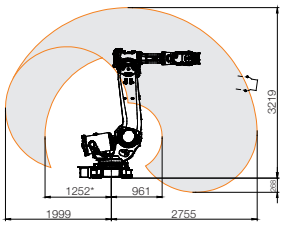
Working range

IRB 6640-180/2.55 (IPA certified),
IRB 6640-235/2.55,
IRB 6640ID-200/2.55



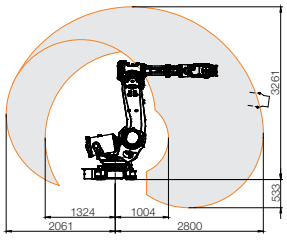
* 1549 for 6640ID

IRB 6640-205/2.75,
IRB 6640ID-170/2.75

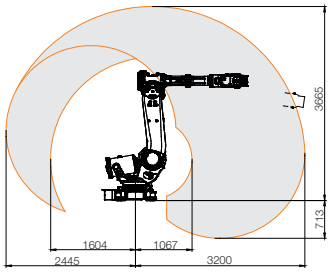


* 1682 for 6640ID

IRB 6640-185/2.8



IRB 6640-130/3.2



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